

On the Approach



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Administrator.*

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Administrator's Message

Holy Cow...It is hard to believe that I have been working at MassDOT Aeronautics for two years already! It has been a pleasure to work with all of you! We have a sound process for continuously improving on an already great state aviation system, and we are making significant strides. Thank you for all of your support!

This year we will be updating our economic impact plan, a project that is executed every three years to demonstrate the return on investment on our airport capital investments. Next year, we will be accomplishing an update to our airport system plan. Previously, the system plan was accomplished every 10 years. We will now be accomplishing the system plan every seven years. Although seven years is an "odd number" (in more than one way), we feel that the periodicity is just about perfect to ensure that we have the most current

Information about our airport system to inform our capital spending decisions.

FY 17 is in the Books: Well Done!

What a year! ...You might be thinking, "...It is the Fall of 2017, what is Jeff talking about?" Well, the state fiscal year ends on 30 June. After that date, we have less than two months to "dot all of the I's" for project work completed in the previous fiscal year. The good news is that, thanks to airport managers, consultants, the FAA, and of course, the aeronautics division team, we executed superbly and smartly.

The operative word is smartly. One of our primary goals is effective stewardship, including ensuring that FAA, state and local funds are targeted for high priority projects, not just any project on our project universe list.

The results were amazing,

as we were able to get the maximum "bang-for-the-buck" for our airport capital projects. In the coming years, with our new IT system, we will be able to execute just as well, more accurately, and with less "elbow grease" (so to speak).

IT System Upgrade: An Integrated System

With regard to the new IT system, we are well on our way to having a fully implemented, integrated information technology system. The system will address project management and capital improvement program needs and more, including information for airport facilities, airport inspection, aircraft registration, aircraft accident investigation, and detailed project information. Additionally, the system will provide capital improvement program prioritization, while considering both federal and state rules and funding levels. (Continued on pg.10)

The Aeronautics Division's mission is to promote aviation throughout the Commonwealth while establishing an efficient integrated airport system that will enhance airport safety, economic development, and environmental stewardship.

Statewide Security Camera Program

By: Thomas Mahoney (Director of Airport Engineering- MassDOT Aeronautics Division)

Anyone who has stood in line for the security check at airports knows first-hand what security is all about. The way that security is viewed at airports changed on September 11, 2001. In response, the Massachusetts Aeronautics Division issued a Security Directive on November 14, 2001 to “establish minimum airport Security Standards for public-use airports located in the Commonwealth of Massachusetts.” One of the security guidelines calls for “monitoring airport property by performing regular inspections and by means of video surveillance if warranted.”

In 2013, there was a movement on the federal level to close contract Air Traffic Control Towers including several in Massachusetts. If that were to happen, the workload of airport managers at these airports would be considerably increased. One way to assist the managers was to install cameras on the towers with a link that would enable them to monitor aircraft movements from their offices. Thus, the Statewide Security Camera Program was born.



Beverly Municipal Airport, Photo taken by Cliff Vacirca

This program is partnership between the MassDOT Aeronautics Division and MBTA Security Team, headed by Rob Creedon. Using an existing contract for the MBTA, each airport is assessed and the design is completed. Utilizing a Statewide Contract for Security, Surveillance, Monitoring and Access Control Systems, the vendors who are qualified under this contract are asked to provide a quote, and contracts are awarded to the lowest bidder.

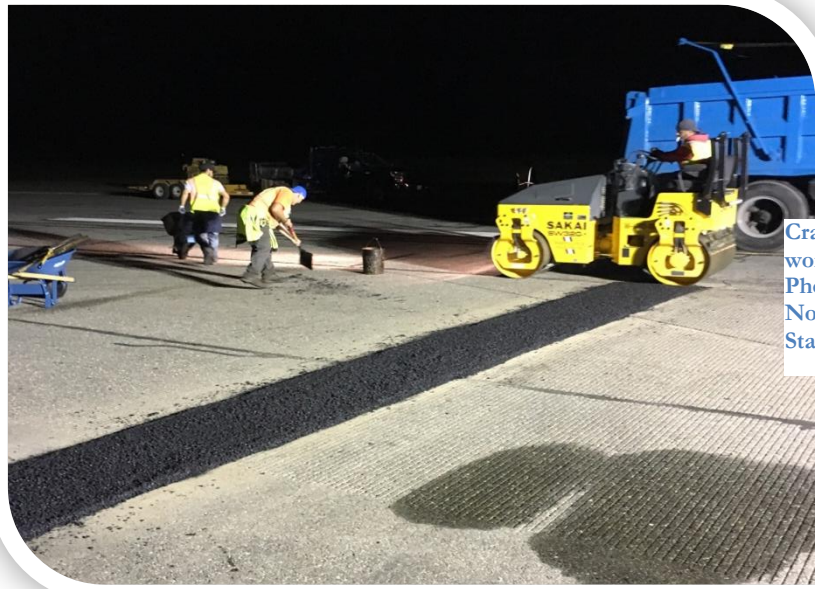
To date, cameras have been installed at all seven of Massachusetts towered airports under the jurisdiction of the Aeronautics Division. Towered airports are not the only airports in Massachusetts to benefit from this program. MassDOT Aeronautics Division has installed cameras at 11 General Aviation Airports throughout the Commonwealth. These airports were chosen for various reasons ranging from monitoring environmentally sensitive sites, to vandalism, and trespassing. One case in point, there was a burglary at an airport restaurant and the video surveillance tape was given to the local law enforcement officers, and the perpetrator was apprehended. Eventually, all public use airports in Massachusetts will be outfitted with cameras. Approximately \$2.7 million has been spent to date for the program and another \$750,000 has been budgeted for 2018 fiscal year.

To learn more about the Camera Program, please contact Tom Mahoney at 617-412-3678 or email me at Thomas.mahoney@dot.state.ma.us. ➔

Statewide Airport Crack Sealing Project

By: Owen Silbaugh (Airport Engineer- MassDOT Aeronautics Division)

When we are developing the Aeronautic Division Capital Improvement Program (CIP), reliability is the number one priority. Pavement preservation is included in this category. Over the past five plus years, MassDOT has provided airports with numerous projects aimed at preventative pavement maintenance. This past spring, MassDOT continued this program by crack-sealing pavements at 18 airports across the Commonwealth.



Crack repair work at MVY-
Photo by Mark Noonan, Stantec

Using the Pavement Condition Index (PCI) survey data completed in the Fall 2016, we decided to use a data driven approach in the development and prioritization of the pavements to be included in the project. The first step was to review all pavements that were near or above the critical PCI (75 for runways, 70 for taxiways, and 65 for aprons). In that way, the life of the pavement can be extended from one to three years. In an effort to maximize the funding available, only runways and taxiways were chosen for the project. Aprons will be sealed in future years.

The design of the project was done in house by the Aeronautics Division staff, which allowed more capital dollars to be dedicated to the construction budget. Staff at the Highway Division and MassDOT Legal was instrumental in assisting us with the development of new front specifications, throughout the entire bidding process.

Following are some of the key stats of the project:

- 18 total airports included in the program
- 17 full length runways and 4 partial length runways
- 13 full length (end-end) taxiways including numerous stub taxiways
- 13 bid alternates were completed
- \$139K of work was added by change order

A special thank you goes out to all of the airports, airport staff, Sealcoating, and Stantec; without a complete team effort and daily coordination, we would not have been able to complete this work before the end of the state fiscal year.

If you have any questions regarding this project or future pavement preservation needs please contact Owen Silbaugh (617-412-3689)→

Statewide Airport Pavement Management System Project Update

By: Owen Silbaugh (Airport Engineer- MassDOT Aeronautics Division)

In 2012, the Aeronautics Division completed the first system-wide Pavement Condition Index (PCI) survey and Airport Pavement Management System (APMS) report in order to help our Airports comply with the requirements of the Federal Aviation Administration (FAA) grant assurances. The PCI data helps to prioritize pavement maintenance projects and aid each airport in the development of their 5-year Capital Improvement Program (CIP). This will also assist the Aeronautics Division in developing our Statewide CIP for the next 5 years.

In accordance with the FAA Advisory Circular, the PCI information should be updated every 3 to 5 years. Therefore, in the Fall of 2016, we began the process of compiling all pavement data performing PCI surveys at each of the 33 airports.



After the PCI surveys were completed, all of the field data was evaluated and uploaded in the PAVER software. The consultant, after consultation with MassDOT, determined what type of preventative maintenance treatments should be employed for each of the numerous distress types. Additionally, MassDOT asked the consultant to prepare three investment scenarios which would highlight expected costs for the next six years.

Scenario	System-wide PCI Value in 2016	System-wide PCI Value in 2023 (Predicted)	Cost (only includes physical construction costs)
Unlimited Budget	68	90	\$157M
Achieve PCI of 75	68	75	\$82M
Maintain Current PCI	68	68	\$41M
Do Nothing	68	59	\$0M

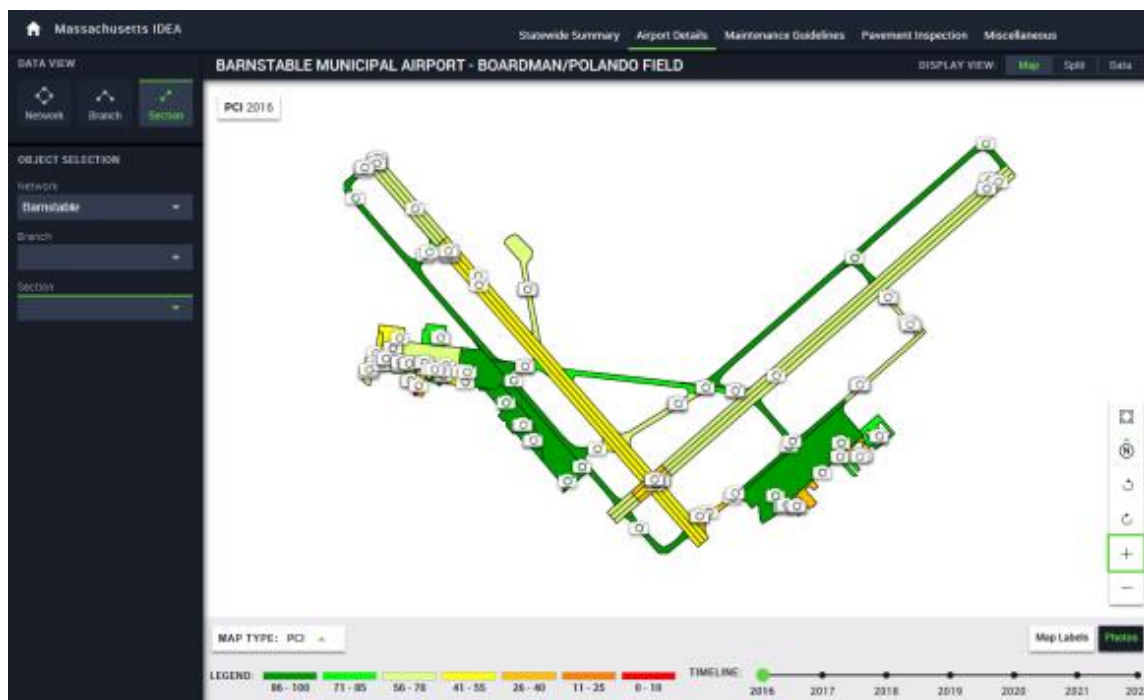
Statewide Airport Pavement Management System Project Update (Cont.)

By: Owen Silbaugh (Airport Engineer- MassDOT Aeronautics Division)

The following are some of the key stats of the project:

- Current system-wide PCI is 68 (70 in 2012)
 - Current runways PCI is 66 (69 in 2012)
 - Current taxiways PCI is 71 (74 in 2012)
 - Current aprons PCI is 71 (70 in 2012)
 - Current taxilanes PCI is 54 (58 in 2012)
- 33 airports were surveyed
- 43.3M square feet of pavement in the entire system
 - 41% Runway / 27% Taxiway / 25% Apron / 7% Taxilane
- 45% of the total pavement is above the critical PCI which indicates the need for maintenance activities
- 55% of the total pavement is below the critical PCI which indicates the need for rehabilitation (43%) or reconstruction (12%)

The above information is summarized in the Executive Summary available on the [PCI website](#). Additionally, individual reports were produced for each airport, which can be found on the PCI website. Hard copies of the Executive Summary and Individual Reports will be provided to each airport during the CIP meeting.



Screenshot of the PCI website

If you have any questions regarding this project, the PCI website, or pavement maintenance please contact Owen Silbaugh at (617-412-3689). ➔

Cape Cod Community College (CCCC) Aviation Maintenance Technology (AMT) Program.

By: Denise Garcia (Director of Aviation Planning- MassDOT Aeronautics Division)

Cape Cod Community College's AMT program provides a great opportunity for students interested in entering the aviation maintenance field as the current demand for highly skilled aviation technicians far outweighs the supply of certified mechanics. The program opened its doors in September 2016 and the first AMT class is scheduled to graduate this fall.

The Aeronautics staff recently toured the new training facility at Plymouth Municipal Airport with AMT Program Director, Stan Mackiewicz and 4C's President, John Cox. We were immediately struck by the state of the art classrooms, high tech trainers and simulators, and impressive maintenance hangars with a wide variety of aircraft ranging from single and multi-engine piston to corporate jet. The hangars and classrooms were abuzz with energetic students receiving hands on training on the same type of aircraft and equipment they'll be working on when they begin their careers in the aircraft maintenance field. Stan was our gracious tour guide and eagerly showed us their acquired aircraft, virtual painting and welding simulators, a fully functional paint booth, and a state of the art network "talking" tool box with easy to use software that can tell you the number of tools removed, who checked them out and the history of its active users with audible voice confirmation.

When asked where the inspiration for the AMT program came from, President Cox said "I met with Dave Bushy, former President of Cape Air for a tour of their Hyannis facility and recognized a need for a program of this type in the region." He further stated "this is a great opportunity that business and industry have embraced and we need to keep the momentum going forward. The program has really taken off and students are starting to show great progress on their written, oral, and practical exams. Airlines and service companies have helped mine the process along and have shown great interest in recruiting the students." Stan added that some students have already been offered jobs contingent on graduating and passing the FAA exams.



Snap-on electronic "talking" tool box



AMT Program instructional aircraft

Cape Cod Community College (CCCC) Aviation Maintenance Technology (AMT) Program. (Cont.)

By: Denise Garcia (Director of Aviation Planning- MassDOT Aeronautics Division)

The FAA approved Part -147 certification program includes 1900 hours of airframe, power plant and general training and is the first step for those interested in earning their Airframe and Power Plant (A&P) Mechanic Certificate. The program also provides a solid foundation for students interested in earning an Associate's degree (AAS) in Aviation Maintenance Technology or in continuing their education to pursue a more-advanced degree.

The Commonwealth of Massachusetts invested \$1.95M (37%) in funding the program and the remaining \$3.36M (63%) came from two federal grants from the US Department of Labor's Employment and Training Administration and the National Science Foundation. In addition, MIT and NASA donated another \$300K for program scholarships.

The program's curriculum offers flexible full and part-time day and evening classes over 15-24 months and is one of the fastest and least expensive aviation maintenance programs in the country where students can earn their Associate's degree for less than most others charge for their AMT programs. Students can complete the training for the AMT certificate including the FAA exams for just over \$18K, or take an additional (7) courses to earn an Associate's degree for approximately \$20K.



**Cape Cod Community College President John Cox
and Aviation Maintenance Technology Director
Stan Mackiewicz**



AMT students hard at work



Aeronautics staff Mike Garrity

The CCCC AMT Program is currently supported by an instructional team of three full time faculty and eight part time highly skilled faculty instructors engaged in the continuous improvement of the program as well as developing additional program content. Next steps include adding an additional 100 hours to the program for 2000 contact hours, developing an avionics module, expanding to a third hangar, adding an on-line component, creating a transitional program between military and civil aviation and exploring the addition of housing options in the local vicinity. Financial aid options are available. For more information, please contact Miles Tranchina at 508-375-5062 or m.tranchina@capecod.edu. ➔

Statewide Vegetation Management Program –Yearly Operating Plans

By: Nathan Rawding (Environmental Analyst- MassDOT Aeronautics Division)

MassDOT Aeronautics, teaming with Stantec Inc. led by Randy Christensen, has continued working with airports across the State to update Yearly Operational Plans (YOP) to facilitate airport vegetation maintenance of previously approved management areas. In fiscal year 2017 (calendar year 2016/17), MassDOT selected four (4) airports to assist with vegetation maintenance needs: Orange Municipal Airport, Harriman-and-West Airport, Fitchburg Municipal Airport, and Taunton Municipal Airport.



Mechanical removal of Vegetation regrowth at Orange Municipal Airport

As with previous airports, the consultant team, along with MassDOT and the airport management, conducted site visits and planning meetings in the Summer of 2016 to gather information necessary to update the YOPs. After updating, MassDOT developed a bid package and selected contractors to implement various herbicide and mechanical removal methods to reduce airfield hazards and to prevent existing or future vegetative airspace penetrations.

Vegetation management work commenced early 2017, and was completed at all airports with the exception of Harriman-and-West airport due to unsuitable climate conditions



Maintenance of vegetation along airport fence at Orange Municipal Airport

Statewide Vegetation Management Program –Yearly Operating Plans (Cont.)

By: Nathan Rawding (Environmental Analyst- MassDOT Aeronautics Division)



Maintenance equipment at Beverly Regional Airport

For fiscal year 2018, MassDOT has selected four (4) airports to move forward with YOP updates: Westfield-Barnes Regional Airport, Lawrence Municipal Airport, George Harlow Field, and New Bedford Regional Airport.

Additionally, as part of the 2017 ASMP grant awards, MassDOT Aeronautics assisted several airports with the purchase of equipment to conduct routine vegetation management. Both Beverly and Pittsfield purchased compact tracked loaders along with mulching attachments to keep vegetation areas clear.

The next round of site visits and planning meetings are already planned to take place early August 2017. Questions about the MassDOT Aeronautics Statewide VMP program can be directed to Environmental Analysts Nate Rawding at 617-412-3636 or Mike Garrity at 617-412-3690. ➔

The 2018 International Aviation Art Contest

By: Steve Rawding (Aviation Planner- MassDOT Aeronautics Division)

This year's theme for the 2018 International Aviation Art Contest is "Flight into the Future". Students are encouraged to use their imaginations and creativity to create a piece of art illustrating their vision of flight in the future. Artwork will be judged for its creative use of the theme in relation to the aviation world.

The contest is now open to student's ages 6 thru 17 years old. There are three age groups, 6 thru 9, 10 thru 13 and 14 thru 17 years of age. The state winning art work will be forwarded to the National Association of State Aviation Officials (NASAO) in Washington, D.C. to compete nationally with national winners then being forwarded to FAI Headquarters in Switzerland for international judging.

The contest art entries must be sent to the Aeronautics office by Friday, January 19, 2018.

Please, feel free to contact us at the Aeronautics Division for brochures with contest information, contest rules and authenticity certificate. ➔

"Flight Into the Future"



Sky Waters, Minnesota

Administrator's Message (Continued from page 1)

system for all of the projects. With “good” information, we will have the ability to track the metrics on all of the aforementioned areas through the use of electronic dashboards (sort of electronic summary reports). This will help us to optimize project delivery, and ensure that more priority projects are accomplished on-time and on-budget.

State Airport Administration Buildings: The Nerve Centers

With regard to the state airport administration building program, budget constraints over the last couple of years have limited our ability to start some of the new buildings. However, last year we completed a couple of the Group One projects. So, we now have buildings complete at Mansfield, Beverly and Fitchburg airports. Additionally, after sustaining major damage from a tornado in 2011, Southbridge Airport can finally say that they are well on their way to a full recovery. They have completed their new combination airport administration building and aircraft hangar. The design is quite similar to the other new airport administration buildings, and looks fabulous. The building was made possible with funding from insurance, the FAA, the state, as well as the local community. By the way, the Southbridge Municipal Airport restaurant is back in operation, a great throwback diner, with offerings that are quite tasty, and service that is superb, so please visit sometime soon! All of the new airport administration facilities look absolutely awesome, and all of the airports and communities are reaping the rewards!

This year, we will be moving forward deliberately. Our plan is to start some of the Group Two construction, while updating the plans for the remaining buildings so that we are ready to move forward in FY19.

Unmanned Aerial Systems: Drones

We are planning to utilize drones for work across MassDOT and the MBTA. In 2016, we conducted preliminary drone research on the opportunities to use drones to accomplish work such as inspections and asset management. We also studied counter-drone technologies that would assist us with protecting our airports, and the approach and departure corridors.

In early 2017 we accomplished drone demonstrations for MassDOT and the MBTA, while also beginning the process of drafting drone policy and procedures. We also studied options for creating an organization-wide drone program and drone pilot (test) program for MassDOT and the MBTA.

As I'm writing this article, we are accomplishing the final planning for pilot programs that will begin this Fall. Some MassDOT & MBTA drone missions will be flown exclusively by the Aeronautics Division; others will be flown by MassDOT & MBTA employees' in-the-field, or by vendors.

For airports, these test programs will ultimately allow us to provide inspection, monitoring and obstruction analysis support that will improve safety, reduce task time, improve quality of data, and reduce costs. Additionally, we will be accomplishing drone-related research with UMass, other universities, and industry to assess technologies that will be able to provide situational awareness about drones flown too close to our airports. Pilots, air traffic controllers and airport managers need to have an awareness of threats to safety, and technologies and procedures should be developed to mitigate the negative impact of any potential safety threats.

That's all for this issue, I look forward to seeing you all soon! ➔



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